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(54) **Cleaning tool**

(57) A lavatory bowl cleaning tool comprising an elongate cleaning pad storage container (1) having at one end an aperture through which in use the foremost of a stack of cleaning pads stored within the container projects and being formed at the other end thereof remote from the aperture so as to be suitable for use as a handle, and a pad loader (2) arranged so as to be slideable backwards and forwards along the container (1) for pad loading and rejection purposes.

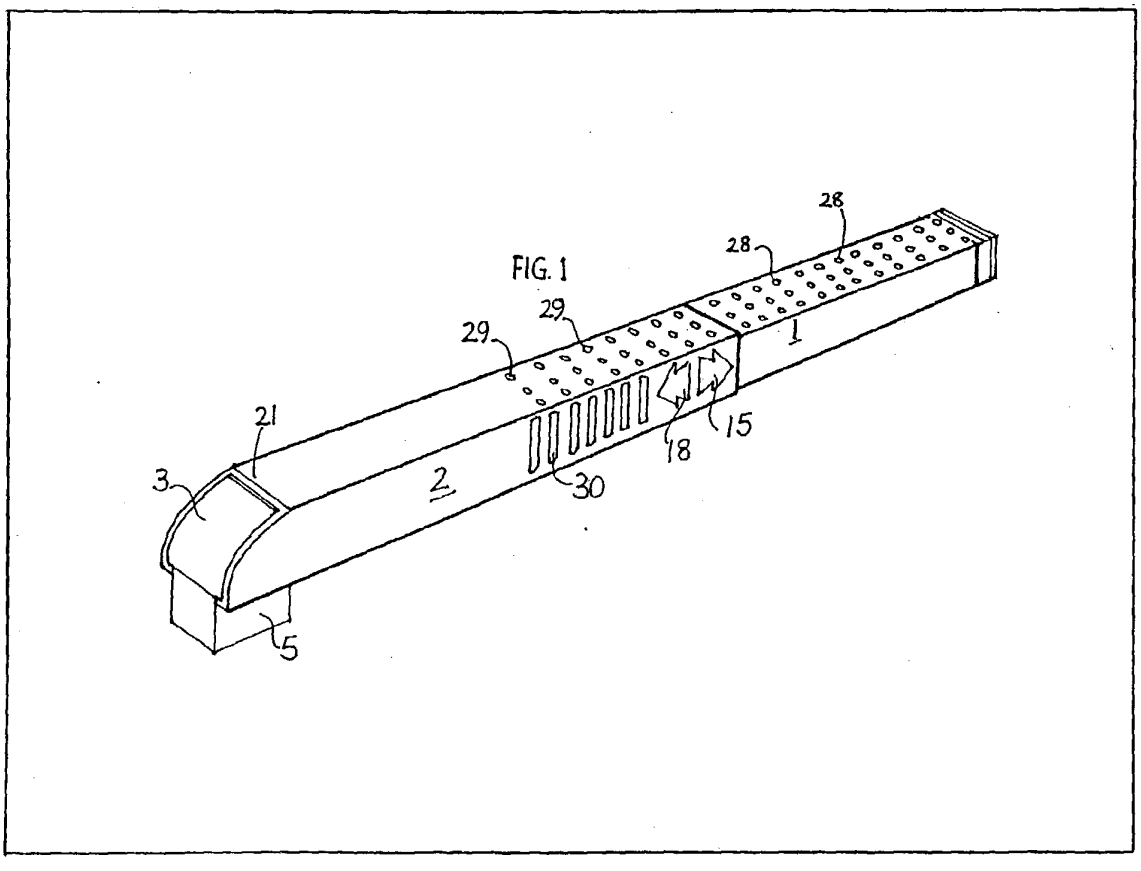

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FIG. 1

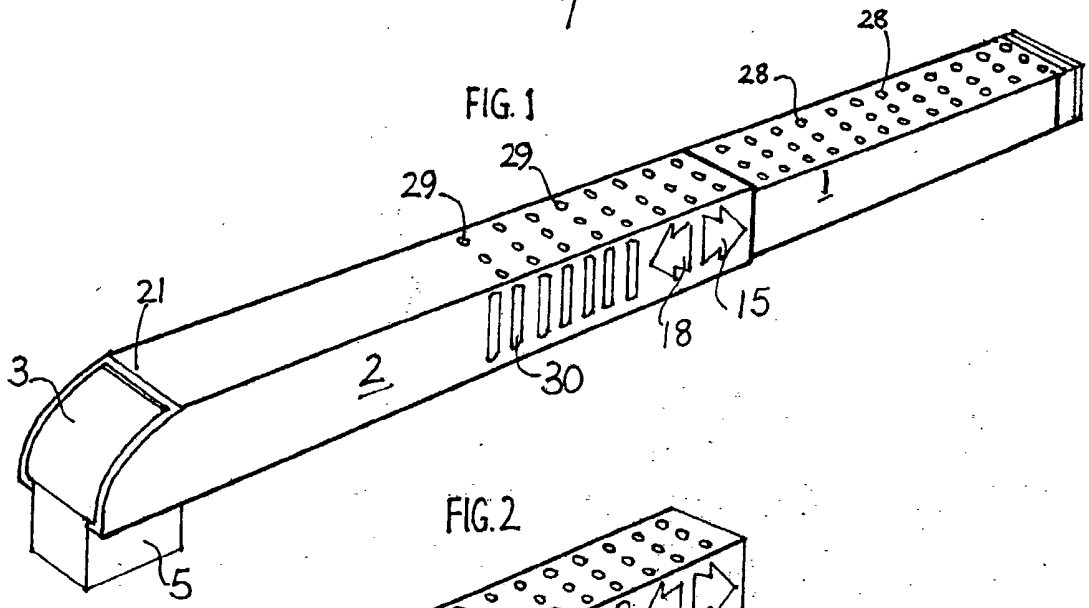
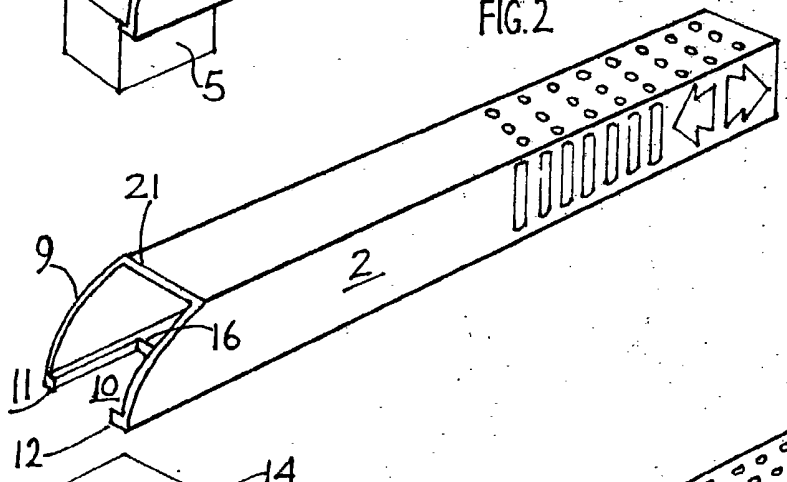


FIG. 2



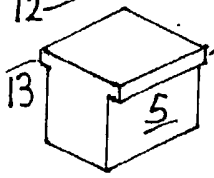


FIG. 3

FIG. 4

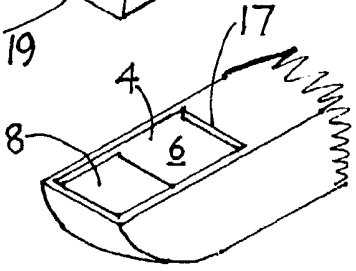


FIG. 5

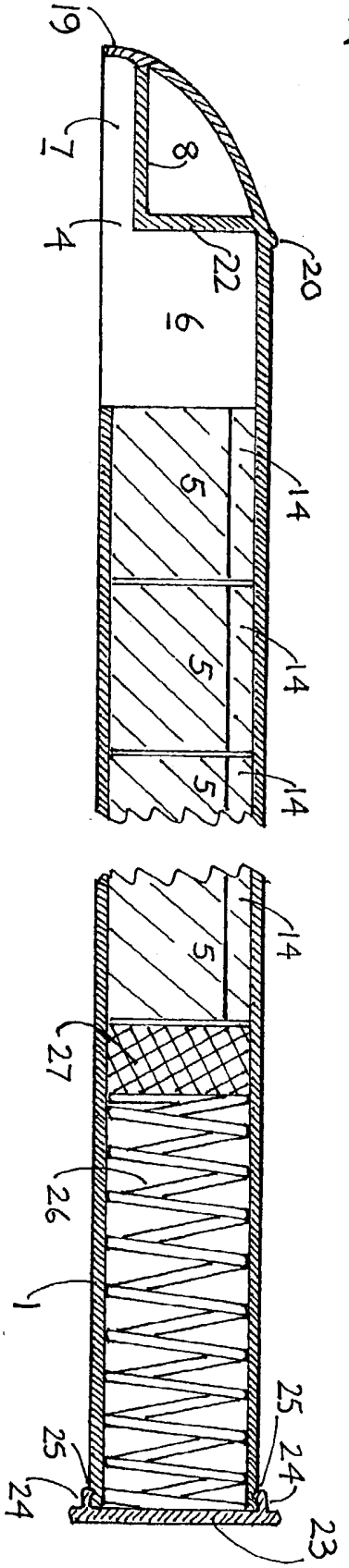


FIG. 6

SPECIFICATION
Cleaning tool

This invention relates to cleaning tools for cleaning the lavatory bowl of a water closet and more especially it relates to such tools which use disposable cleaning pads.

Lavatory bowls may be cleaned with a long-handled brush or sponge and/or with a chemical cleaner. Chemical cleaners alone are not usually entirely satisfactory and consequently the use of a brush or sponge becomes necessary, at least from time to time. Tools with a fixed brush or sponge head are recognised to present a hygiene problem and accordingly tools with disposable water soluble cleaning pads have been proposed and are to be preferred. Hitherto, however, lavatory bowl cleaning tools which use disposable cleaning pads have all suffered from the disadvantage that the arrangement for loading the tool with a fresh pad and the arrangement for the unloading of a soiled pad have been somewhat less than ideal.

It is an object of the present invention to provide a cleaning tool which uses disposable cleaning pads which may be loaded and unloaded in a simple and convenient manner.

According to the present invention a lavatory bowl cleaning tool comprises an elongate cleaning pad storage container having at one end an aperture through which in use the foremost of a stack of cleaning pads stored within the container projects and being formed at the other end thereof remote from the aperture so as to be suitable for use as a handle, and a pad loader arranged so as to be slideable backwards and forwards along the container for pad loading and rejection purposes.

The pad container may have an elongate substantially flat side in which the aperture is provided.

The pad loader may be hollow and arranged to embrace the container so that the container is slideable within it.

The container may conveniently be square or rectangular.

The container may comprise a main section for storing a stack of cleaning pads and a compartment of reduced depth adjacent the aperture end of the container which is in communication with the main section and the depth is just sufficient to accommodate the welted portion of a welted cleaning pad, the aperture being rectangular and arranged to extend across the full width of the container with one half of the aperture in the direction of the longitudinal axis of the tool being arranged to be in communication with the compartment and the other half of the aperture being arranged in communication with the main section, the pad loader being fitted to and slideable on the container and including at one end thereof in a side juxtaposed to the aperture a slot through which in use a welted cleaning pad can project to be retained by the welts.

The slot in the pad loader may be square or rectangular.

The container may include biasing means arranged in use to provide a force which is sufficient to urge pads of the stack towards the aperture but which is not sufficient to prevent a pad from dropping from the stack to project through the aperture.

The biasing means may be secured to a closure member adapted for fitment to the end of the container remote from the aperture.

The container and the pad loader may each include a catch part, the catch parts being mutually engageable normally to prevent movement between the container and the pad loader.

The catch parts may be a ridge and a groove respectively.

The container and the pad loader may be made of a plastics material.

One embodiment of the invention will now be described solely by way of example with reference to the accompanying drawings in which:

Figure 1 is a perspective view of a cleaning tool;

Figure 2 is a perspective view of one part of the cleaning tool shown in Figure 1;

Figure 3 is a perspective view of a disposable cleaning pad for use with the cleaning tool of Figure 1;

Figure 4 is a perspective view of another part of the cleaning tool shown in Figure 1;

Figure 5 is a perspective view from beneath of the part of the cleaning tool shown in Figure 4; and

Figure 6 is a sectional side view of that part of the cleaning tool shown in Figure 4.

Referring now to Figure 1, a cleaning tool for cleaning the lavatory bowl of a water closet comprises an elongate container 1 having a generally rectangular cross-section which is slideable within the hollow body of a pad loader 2 and which serves as a handle. The container 1 extends within the pad loader 2 and includes a curved end portion 3 in which is formed an aperture 4, as shown most clearly in Figures 5 and 6, through which a welted cleaning pad 5 is arranged to project. The container 1 comprises a main section 6 which extends along the axial length of the cleaning tool and in which the cleaning pads 5 are stored and a front compartment 7 of reduced depth which is formed by an inner wall 8.

One end 9 of the pad loader 2 is curved to correspond with the shape of the curved end portion 3 of the container 1 and one wall of the pad loader 2 adjacent the curved end 9 is cut away to define a slot 10 as shown clearly in Figure 2. The slot 10 occupies a part only of the width of the pad loader 2 and therefore two flanges 11 and 12 are formed which correspond in width to welts 13 and 14 provided one on each side of the cleaning pads 5.

In order to load a cleaning pad 5 into position for cleaning, the pad loader 2 is slid back in the direction of the arrow 15 until a rear edge 16 of the slot 10 aligns with a rear edge 17 of the

aperture 4. A cleaning pad 5 positioned above the aperture in the main section 6 of the container 1 will then be able to fall under gravity through the aperture 4 until the welts 13 and 14 of the cleaning pad 5 rest on the flanges 11 and 12 respectively of the pad loader 2 so that the cleaning pad 5 is retained. If the pad loader 2 is then slid forward in the direction of the arrow 18, a cleaning pad 5 supported by its welts 13 and 14 on the flanges 11 and 12 will be urged forward by contact with the rear edge 16 of the slot 10 until it occupies the compartment 7. At this position, the curved end 9 of the pad loader 2 will be aligned with the curved end 3 of the container 1 and the cleaning pad 5 will be retained between the internal wall 8, the flanges 11 and 12 and a front edge 19 of the pad loader 2 which is adjacent to the internal wall 8.

In order to lock in this position the pad loader 2 to the container 1, the container 1 is provided with a locking ridge 20 which co-operates with a groove (not shown) located just inside an upper leading edge 21 adjacent the curved end 9 of the pad loader 2. With the pad loader 2 and the container 1 locked together as just before described, the cleaning tool may be used without risk of a cleaning pad 5 which projects from the aperture 4 in the container 1 working free.

In order to eject a soiled cleaning pad 5 after use, the pad loader 2 is simply slid backwardly in the direction of the arrow 15 along the container 1 until a position is reached at which the edge 16 of the slot 10 aligns with an internal vertical wall 22 formed within the container 1. At this position a soiled cleaning pad 5 will be free to fall under gravity from the compartment 7 of the container 1. Further movement of the pad loader 2 in the direction of the arrow 15 until the rear edge 16 of the slot 10 aligns with the rear edge 17 of the aperture 4 produces a positional relationship between the pad loader 2 and the container 1 at which a fresh one of the cleaning pads 5 can fall from the main section 6 of the container 1 through the aperture 4 so as to be held in position by means of its welts 13 and 14 which rest on the flanges 11 and 12. In order to load the fresh cleaning pad, the pad loader 2 is then again pushed forward, as hereinbefore described, in the direction of the arrow 18 so that the fresh cleaning pad is pushed forward into the compartment 7.

The cleaning pads 5 are introduced initially into the container 1 from an end thereof opposite to the aperture 4 which is normally closed by means of an end cap 23 comprising two prongs 24 which include ridges 25 which mate with corresponding grooves formed in the outside of the container 1. In order to urge the cleaning pads 5 forward in the direction of the arrow 18, a weak spring 26 is provided which is secured at one end to the inside of end cap 16 and at the other end to a plunger 27. The strength of the spring 26 is arranged to be sufficient to urge the cleaning pads 5 forward and yet not so strong as to prevent a cleaning pad 5 from falling, under the influence of gravity from the main section of the container 1, in order to be loaded consequent upon forward movement of the pad loader 2 into the compartment 7.

The cleaning pads 5 are advantageously made by compressing together layers of tissue paper or fibre soaked in a solution of a cold water activated foaming cleanser, bleach and fragrant smelling air freshening substance. A colouring agent to aid cosmetic appeal may also be employed in the solution. The compressed layers of tissue paper are then dried. If desired, the dried and compressed cleaning pads can be given a top spray of the cleanser/bleach/fragrant smelling substance before being packaged for sale. The pads 5 may also be made by extruding paper pulp or fibre bound together by the same chemical agent. In this case, paper pulp or fibre granules may be mixed with a solution of the cleanser/bleach/fragrant smelling substance. The resultant mixture can be aerated with carbon dioxide and extruded through a die as a continuous ribbon. The ribbon can then be dried and cut into appropriately sized cleaning pads. The cleaning pads may be given a top spray of the cleanser/bleach/fragrant smelling substrate before being packaged for sale.

The chemicals on the cleaning pads 5 not only facilitate easier cleaning, but also because of their binding nature on the cleaning pad, they facilitate slow disintegration of the cleaning pads 5 as they dissolve in the water. The cleaning pads 5 are designed to be of a size whereby they can be easily flushed from a lavatory bowl even when fully saturated with water. The flushing action also greatly speeds the disintegration of the cleaning pad, making it incapable of blocking either the household soil pipe, or the community sewage system. An ideal size of the cleaning pad when dry may be 6 cm × 6 cm × 2 cm.

The cleaning pads 5 may be compressed in such a way as to form the welts 11 and 12 which may be about 1 cm wide and 1 cm deep and which run along two opposing sides.

Before the cleaning pads 5 are packed for sale they may advantageously be given a top coating of water-activated bleach and cleanser in order to provide an obvious chemical reaction immediately the cleaning pad is placed in water. Perfumed air freshening material may also be added if desired.

In order to facilitate a deodorising effect afforded by the cleaning pads 5, the container 1 is formed to include holes 28 which facilitate circulation of air around the cleaning pads 5 contained therein and similarly holes 29 and slots 30 are formed in the pad loader 2 for the same purpose.

It is envisaged that the pad loader 2 and the container 1 would normally be made of plastics material but they may be made from any other suitable material and for example they may be made from a plastics film coated cardboard and the whole assembly may be offered for sale as a disposable cleaning device in which the container 1 serves as a cartridge filled with suitable cleaning pads.

Various modifications may be made to the

arrangement shown without departing from the scope of the invention and for example the edge 16 and/or the edges of the flanges 11 and 12 which define the aperture 10 may be fitted with a rubber sealing gasket whereby a good seal is afforded between the tool and a pad contained therein so that the possibility of water creeping back in to the container 1 is minimised.

It will be appreciated that a cleaning tool as just before described is hygienic, is easy to load with fresh cleaning pads and facilitates the simple disposal of soiled cleaning pads.

CLAIMS

1. A lavatory bowl cleaning tool comprising an elongate cleaning pad storage container having at one end an aperture through which in use the foremost of a stack of cleaning pads stored within the container projects and being formed at the other end thereof remote from the aperture so as to be suitable for use as a handle, and a pad loader arranged so as to be slideable backwards and forwards along the container for pad loading and rejection purposes.

2. A lavatory bowl cleaning tool according to claim 1 in which the pad container has an elongate substantially flat side in which the aperture is provided.

3. A lavatory bowl cleaning tool according to claim 1 or claim 2 in which the pad loader is hollow and arranged to embrace the container so that the container is slideable within it.

4. A lavatory bowl cleaning tool according to any one of the preceding claims in which the container is square or rectangular.

5. A lavatory bowl cleaning tool according to any one of the preceding claims in which the container comprises a main section for storing a stack of cleaning pads and a compartment of reduced depth adjacent the aperture end of the container which is in communication with the main section and the depth of which is just sufficient to accommodate the welted portion of a welted cleaning pad, the aperture being rectangular and arranged to extend across the full width of the container with one half of the aperture in the direction of the longitudinal axis of the tool being arranged to be in communication with the compartment and the other half of the aperture being arranged in communication with the main section, the pad loader being fitted to and slideable on the container and including at one end thereof in a side juxtaposed to the aperture a slot through which in use a welted cleaning pad can project to be retained by the welts.

6. A lavatory bowl cleaning tool according to claim 5 in which the slot in the pad loader is square or rectangular.

7. A lavatory bowl cleaning tool according to any one of the preceding claims in which the container includes biasing means arranged in use to provide a force which is sufficient to urge pads of the stack towards the aperture but which is not sufficient to prevent a pad from dropping from the stack to project through the aperture.

8. A lavatory bowl cleaning tool according to claim 7 in which the biasing means is secured to a closure member adapted for fitment to the end of the container remote from the aperture.

9. A lavatory bowl cleaning tool according to any one of the preceding claims in which the container and the pad loader each include a catch part, the catch parts being mutually engageable normally to prevent movement between the container and the pad loader.

10. A lavatory bowl cleaning tool according to claim 9 in which the catch parts are a ridge and a groove respectively.

11. A lavatory bowl cleaning tool according to any one of the preceding claims in which the container and the pad loader are made of a plastics material.

12. A lavatory bowl cleaning tool substantially as herein described with reference to the accompanying drawings.

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